INPUT

ORDER/INVOICE/FULFILLMENT

| ORIGINATOR (SIGNATURE) | _Warren S Rybes_ | PREPARED BY: WSR | DATE 3/13/85 |

ACTIVITY
- [X] NEW ORDER
- [ ] CONTINUATION
- [ ] CHANGE
- [ ] CANCEL
- [ ] SPECIAL:

- [X] FULFILLMENT ONLY
- [X] SINGLE INVOICING
- [ ] MULTI-INVOICING:
- NO. INVOICES ____
- [ ] PENDING:

COMMISSION TO:		SOLD BY:		APPROVED
J MCGANN	100 %	WSP	100 %	WSR
HCT	%	HCT	%	
Finders Fee	%	Finders Fee	%	INITIAL 3/13/85
				DATE

PRODUCT
- [ ] SUBSCRIPTION
- [X] CUSTOM
- [ ] MULTICLIENT
- [ ] REPORTS
- [ ] COPIES
- [ ] CONSULT./PRESENT.
- [ ] TAPES/MATERIALS
- [ ] REIMBURSED COSTS

US UK	PROJ. I.D./YEAR	TITLE OR DESCRIPTION	AMOUNT
US	YSPR	SYSTEMS INTEGRATION PRESENTATION	10,000

CLIENT AUTH

P.O. # ____ INPUT CONTRACT [ ] LETTER [ ] VERBAL [X]

ATTACH ALL AUTHORIZING DOCUMENTS TO WHITE (CONTRACT) COPY.

ORIGINATOR / INVOICE

SHIP TO:*
NAME: DENNIS HOPKINS
TITLE: DIRECTOR, IND. FORECASTING
COMPANY: SPERRY CORP
ADDRESS: COMPUTER SYSTEMS
P.O. BOX 500
Blue Bell, PA 19424
PHONE (215) 542-3688

INVOICE TO: (IF DIFFERENT)
NAME ____
TITLE ____
COMPANY ____
ADDRESS ____
PHONE ( )

- [ ] *Check here if more than one shipping address and attach names and addresses to green (fulfillment) copy.
- [ ] *Check here for address change to mail list.

INVOICE TO READ: (FOR OTHER THAN STANDARD WORDING)

____

SPECIAL INSTRUCTIONS FOR HANDLING, BILLING, STAGGERED OR DELAYED PAYMENTS, ETC.

PAYMENT AT END OF PRESENTATION — SCHEDULED MARCH 27, 1985. PURCHASE ORDER BEING SENT NOW.

O.I.F. ONLY

| INV. COMP. | BY: | DATE: | CLIENT #: | ORDER #: | INV. #: | MULTI-INVOICING OF ____ |

ORIGINATOR/SHIPPING / FULFILLMENT

ITEM DESCRIPTION OR TITLE	NO.	BY	DATE	ITEM DESCRIPTION OR TITLE	NO.	BY	DATE

FULFILLMENT TO BE COMPLETED IN: [ ] PALO ALTO [ ] LONDON [ ] OTHER ____

• WHITE - CONTRACT • GREEN - FULFILLMENT • YELLOW - INVOICE • PINK - ORIGINATOR

R 1/85

TITLE __Systems Integration Presentation__

CLIENT __Sperry__

CONTRACT: ATTACHED____ TO FOLLOW____ LETTER____ VERBAL ✓

PROJECT LEADER __I. McGann__ CODE __YSPR__

DATE STARTED __3/5/85__ PLANNED COMPLETION DATE __3/27/85__

LEVEL OF EFFORT(Professional Man Days) __8__

TOTAL CONTRACT VALUE: $ __10,000__

REVENUE DISTRIBUTION (% or $) INPUT US __100%__ INPUT LTD____

REIMBURSABLE EXPENSES: NO____

          YES ✓

EXP. BUDGET_____   TO COVER: TRAV: ✓
                                  · TEL: NO
                                   RPT. PREP.: NO
                                   OTHER: ✓

BILLING SCHEDULE DESCRIPTION __Bill at presentation__
__date - March 27, 1985__

PROJECT DESCRIPTION __From existing files,__
__reports, and related data prepare__
__a presentation overview of the__
__opportunities seen for hardware__
__vendors in the systems integration__
__field__

INDICATE TYPE OF CUSTOM WORK: REPORT____ PRESENTATION ✓

          THANK YOU PACKAGE: YES____   NO ✓

PROJECT: YSPR

DATE: 3/8/85

PROJECT LEADER: J. McGANN

ACTIVITY / PROJECT	NAME	MAN DAYS	EFFI-CIENCY	ESMD	CORP WEEK END	JANUARY 1 1/4	2 1/11	3 1/18	4 1/25	FEBRUARY 5 2/1	6 2/8	7 2/15	8 2/22	MARCH 9 3/1	10 3/8	11 3/15	12 3/22	13 3/2
PROJECT AUTHORIZATION/ SPECIFICATION																		
O DESIGN																		
O APPROVAL/ REVIEW MEETING																		
INTERVIEWS ON SITE ( ) NO.																		
INTERVIEWS PHONE ( ) NO.																		
DATA PRO AND ANALYSIS	WSO/JM	3															6	1
WRITING																		
ABSTRACT																		
OC																		
REPORT PROD. AND SHIPPING																		
PRESENTATION	WP/JM	1																1
"THANK YOU" MAILED																		
PLAN																		
ACTUAL																		
CUM P/A																		

INPUT

R12/8

INPUT

ORDER/INVOICE/FULFILLMENT

ORIGINATOR (SIGNATURE) _John A McGann_ PREPARED BY: _John A McGann_ DATE: _4/1985_

<table>
<tr><th rowspan="6">ACTIVITY</th><td>☐ NEW ORDER</td><td colspan="2">☑ FULFILLMENT ONLY</td><td>COMMISSION TO:</td><td>SOLD BY:</td><td colspan="2">APPROVED</td></tr>
<tr><td>☑ CONTINUATION</td><td colspan="2">☑ SINGLE INVOICING</td><td>JMG 100 %</td><td>WSP 100 %</td><td colspan="2">WJ</td></tr>
<tr><td>☐ CHANGE</td><td colspan="2">☐ MULTI-INVOICING:</td><td>%</td><td>%</td><td colspan="2">INITIAL</td></tr>
<tr><td>☐ CANCEL</td><td colspan="2">NO. INVOICES ___</td><td>HCT Finders %</td><td>HCT %</td><td colspan="2">4/22/85</td></tr>
<tr><td>☐ SPECIAL:</td><td colspan="2">☐ PENDING:</td><td>Fee %</td><td>Finders Fee %</td><td colspan="2">DATE</td></tr>
</table>

<table>
<tr><th rowspan="8">PRODUCT</th><td>☐ SUBSCRIPTION</td><td colspan="2">US UK PROJ. I.D./YEAR</td><td>TITLE OR DESCRIPTION</td><td>AMOUNT</td></tr>
<tr><td>☑ CUSTOM</td><td>US Y</td><td>SPR</td><td>Systems Integration</td><td>10000</td></tr>
<tr><td>☐ MULTICLIENT</td><td></td><td></td><td>presentation</td><td></td></tr>
<tr><td>☐ REPORTS</td><td></td><td></td><td></td><td></td></tr>
<tr><td>☐ COPIES</td><td></td><td></td><td></td><td></td></tr>
<tr><td>☐ CONSULT/PRESENT.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>☐ TAPES/MATERIALS</td><td></td><td></td><td></td><td></td></tr>
<tr><td>☐ REIMBURSED COSTS</td><td></td><td></td><td></td><td></td></tr>
</table>

CLIENT AUTH. P.O. # _____ INPUT CONTRACT ☐ LETTER ☐ VERBAL ☐

ATTACH ALL AUTHORIZING DOCUMENTS TO WHITE (CONTRACT) COPY.

ORIGINATOR / INVOICE

SHIP TO:*
NAME _Guy Pinter_

TITLE _Director_

COMPANY _Sperry Corp_

ADDRESS _PO Box 500_
Blue Bell, Pa 19424
Mail Station C2NW1

PHONE (215) _542 3274_

INVOICE TO: (IF DIFFERENT)
NAME _____

TITLE _____

COMPANY _____

ADDRESS _____
_____
_____

PHONE ( ) _____

* ☐ Check here if more than one shipping address and attach names and addresses to green (fulfillment) copy.

* ☐ Check here for address change to mail list.

INVOICE TO READ: (FOR OTHER THAN STANDARD WORDING)
/

SPECIAL INSTRUCTIONS FOR HANDLING, BILLING, STAGGERED OR DELAYED PAYMENTS, ETC.
Bill immediately ; presentation made 4/17/85

O.I.F. ONLY

INV. COMP.	BY:	DATE:	CLIENT #:	ORDER #:	INV. #:	MULTI-INVOICING ___ OF ___

ORIGINATOR/SHIPPING — FULFILLMENT

ITEM DESCRIPTION OR TITLE	NO.	BY	DATE	ITEM DESCRIPTION OR TITLE	NO.	BY	DATE

FULFILLMENT TO BE COMPLETED IN ☐ PALO ALTO ☐ LONDON ☐ OTHER _____
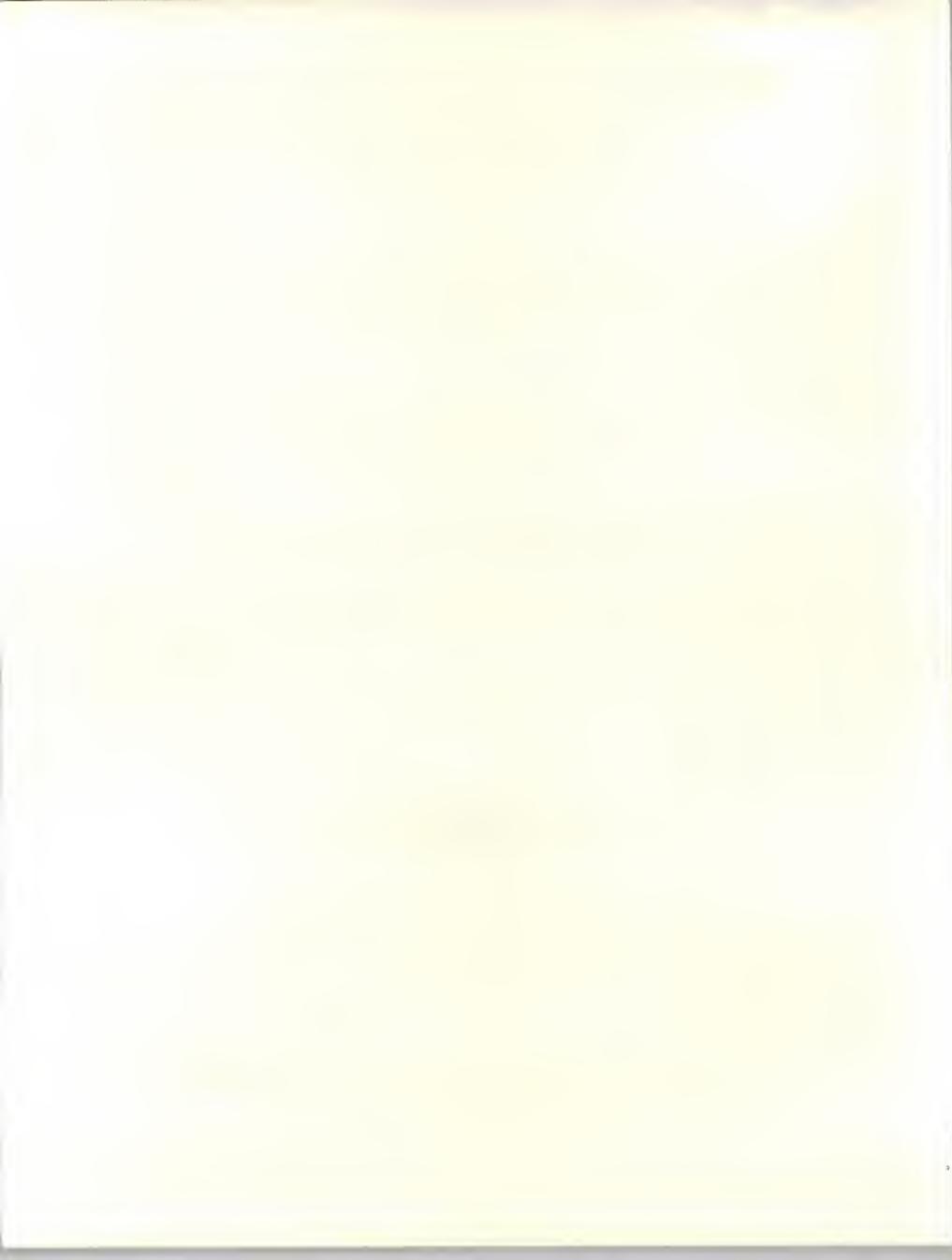
R 1/E

SYSTEMS INTEGRATION MARKET OVERVIEW
AN INPUT PERSPECTIVE

A PRESENTATION FOR SPERRY CORPORATION

BY INPUT
PARK 80 PLAZA WEST ONE
SADDLE BROOK, NJ

APRIL 17, 1985

INPUT

PRESENTATION OUTLINE

INPUT

METHODOLOGY

- INPUT CAMP DATABASE.

- INPUT FILES OF VENDOR INFORMATION.

- CONTACT WITH SELECTED VENDORS AND USERS OF SYSTEM INTEGRATION.

INPUT

- 2 -

SYSTEM INTEGRATION

- SYSTEMS INTEGRATION (S.I.) IS A PROCESS OF INTEGRATING INFORMATION SERVICES AND PRODUCTS TO PROVIDE THE SOLUTION TO A PROBLEM IN WHICH ONE VENDOR OR A PARTNERSHIP OF VENDORS TAKES TOTAL RESPONSIBILITY FOR THE SOLUTION AND, TO THE EXTENT POSSIBLE, MAKES THE CUSTOMER FEEL THAT ONE ENTITY IS PROVIDING ALL ASPECTS OF THE SOLUTION.

- THE SERVICES AND PRODUCTS WHICH ARE PROVIDED INCLUDE:

  - THE SELECTION AND CONFIGURATION OF COMPUTING HARDWARE.

  - THE SELECTION OF SYSTEM SOFTWARE.

  - THE DESIGN FOR AND SELECTION OF SERVICES AND PRODUCTS TO MEET NETWORK REQUIREMENTS.

— INPUT —

SYSTEM INTEGRATION - (CONT-D)

- THE SELECTION OF APPLICATION SOFTWARE
  PACKAGES USUALLY FROM IN-HOUSE SOURCES BUT
  ALSO FROM OTHER VENDORS. THE APPLICATION
  MODULES ARE LINKED AND USE A DBMS OR OTHER
  MEANS OF RELATING DIFFERENT SETS OF DATA.

- MODIFICATION AND ENHANCEMENT OF APPLICATION
  SOFTWARE (UP TO 20-30% OF EXISTING CODE).

- TRAINING, DOCUMENTATION, ON-SITE ASSISTANCE,
  SOFTWARE MAINTENANCE AND POSSIBLY HARDWARE
  MAINTENANCE.

- THE UTILIZATION OF SIGNIFICANT KNOWLEDGE OF
  APPLICATIONS AND THE INDUSTRY IN WHICH THE
  SOLUTION IS DELIVERED.

INPUT

**MAP OF RELEVANT
PRODUCT AREAS TODAY**
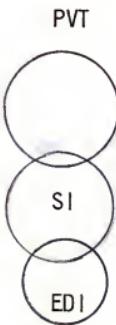
PVT = PLAIN VANILLA TURNKEY

SI = SYSTEM INTEGRATION

EDI = ELECTRONIC DATA INTERCHANGE (OR COMPLEX
SYSTEMS INTEGRATION)

INPUT

MAP OF RELEVANT
PRODUCT AREAS IN 1990
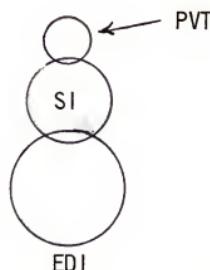
PVT = PLAIN VANILLA TURNKEY
SI = SYSTEM INTEGRATION
EDI = ELECTRONIC DATA INTERCHANGE (OR COMPLEX
      SYSTEMS INTEGRATION)

INPUT

COMBINATION OF SERVICES
OF SELECTED VENDORS

CHARACTERISTICS	VENDOR SYSTEMS			
	MCAUTO (IBIS)	GEISCO (BSI)	GEISCO (MRP)	R&R (DEALER DISTRIB.)
HARDWARE SELECTION	1	1	1	1
SYSTEM SOFT. SELECTION	1	1	1	1
NETWORK SUPPORT	1	1	1	1
APPLICATION SOFTWARE SELECTION	1	1	1	1
LINKED APPLICATION SOFTWARE	1	1	1	1
APPLICATION SOFTWARE MODIFICATION	1	1	1	1
OTHER SUPPORT	1	1	1	1
APPLICATION & INDUSTRY KNOWLEDGE	1	1	1	1

1= ACTUAL
2= PLANNED

INPUT

COMBINATION OF SERVICES
OF SELECTED VENDORS

VENDOR SYSTEMS

CHARAC- TERISTICS	ASK (MANMAN)	SMS (MEDICAL)	TERA (ENERGY SYSTEMS)	COMTEX (INTERNAT'L TRADE SERVICES)
HARDWARE SELECTION	1	1	1	1
SYSTEM SOFT- WARE SELECTION	1	1	1	1
NETWORK SUPPORT	1	1	1	2
APPLICATION SOFTWARE SELECTION	1	1	1	1
LINKED APPLI- CATIONS	1	1	1	1
APPLICATION SOFTWARE MODIFICATION	1	1	1	1
OTHER SUPPORT	1	1	1	1
APPLICATION & INDUSTRY KNOW- LEDGE	1	1	1	1

INPUT

SELECTED VENDORS WHOSE SERVICES ARE NOT SYSTEM INTEGRATION

TURNKEY VENDORS	HBO COMPUTERVISION MANY MICRO TURNKEY VENDORS
PROFESSIONAL SERVICE VENDORS	AGS AUXTON COMPUTER HORIZONS CTG
SOFTWARE VENDORS	MCCORMACK DODGE CULLINET SOFTWARE PRODUCTS INTERNATIONAL CACI MSA

INPUT

GENERAL DISTINCTIONS BETWEEN SERVICES OF SI VERSUS OTHER VENDORS

	VENDOR SERVICE				
	HW	SW	PS	TKY	SI
SELECT HW CONFIGURATION	X			X	X
SELL HW SEPARATELY FROM OTHER SERVICES	X			X	
SELECT DATACOM NETWORK	X			X	X
DESIGN/IMPLEMENT DATACOM NET	X		X		X
SELECT SYSTEM SOFTWARE	X			X	X
DEVELOP, SELL SYSTEM SOFTWARE	X	X			X
MODIFY SYSTEM SOFTWARE	X				X
APPLICATION CONSULTING	X LIMITED	X	X		X
SELL OWN APPLICATION SOFTWARE	X	X	X LIMITED	X	X
SELL OTHER VENDOR SOFTWARE	X			X	X

VENDOR SERVICE

	HW	SW	PS	TKY	SI
SELL SOFTWARE THAT CAN BE ADJUSTED/TUNED		X (PARAMETERS USUALLY)		X	X
MODIFY APPLIC. SOFTWARE	0-10%	30-100%	X LIMITED		0-30%
SUPPLY PROPRIETARY DATABASE SERVICE		X			X (RARE)
MAINTAIN ALL SOFTWARE			X	X	X
MAINTAIN HW	X			X	X
PACKAGE THE WORK OF MULTIPLE VENDORS	X			X	X
PARTNERING TAKE RES. FOR EVERYTHING			X LIMITED	X LIMITED	X

MEANS OF CLASSIFYING SI VENDORS

- CHIEF INFORMATION SYSTEMS INDUSTRY AND/OR BUSINESS ROLE.

- SCALE OF SI SOLUTION (INCLUDING HARDWARE COST).

    - VERY LARGE, COMPLEX – GREATER THAN $10 MILLION.

    - LARGE.....$1,000,000 TO $10,000,000

    - MEDIUM....$ 200,000 TO $1,000,000

    - SMALL.....$ BELOW $200,000

INPUT

MEANS OF CLASSIFYING
SI VENDORS

- ARRANGEMENTS WITH OTHER VENDORS

    .. SUPPLIERS

    .. VAD OR VAR RELATIONS WITH HARDWARE
       VENDOR

    .. SUBCONTRACTORS

    .. PARTNERING

- LEVEL OF SUCCESS

INPUT

DIFFERENTIATION OF SERVICES BY SIZE OF SI SOLUTION

CRITERIA	LARGE SCALE SI	MEDIUM SCALE SI	SMALL SCALE SI
CUSTOMER SIZE (FOCUS)	FORTUNE 500	FORTUNE 1000	FORTUNE 2000
RANGE OF SI SERVICES	WIDEST INCLUDING NETWORK CAPABILITIES	WIDE INCLUDING SOME NETWORK CAPABILITIES	LIMITED
INDUSTRY OR APPLICATION ORIENTATION	INDUSTRY	INDUSTRY AND APPLICATION	LIMITED
INTEREST IN SELLING/PORTING SOLUTIONS TO SMALLER FIRMS	YES	YES	-----
INTEREST IN ADDING NEW CAPABILITIES OR APLICATIONS TO SI PRODUCTS	VERY HIGH	HIGH	LOW
TENDENCY TO SELL CROSS INDUSTRY SOLUTIONS	LOW	MEDIUM	VERY HIGH

— INPUT —

IMPACT OF NEW TECHNOLOGY
ON VENDORS OF SI SOLUTIONS

	TECHNOLOGICAL CHANGE		
	ENHANCED TECHNOLOGY:	SIGNIFICANT CHANGE:	MAJOR CHANGE IN TECHNOLOGY:
SIZE OF VENDORS	NEW PERIPHERAL OR COMMUNICATION FEATURE	NEW COMPUTER	NEW TYPE OF COMPUTER OR NETWORK
SMALL	SOME VENDORS USE DEVELOPMENT TO PROMOTE BUSINESS; FAST REACTION	NEGATIVE IMPACT ON ESTABLISHED VENDORS; ENCOURAGES NEW FIRMS TO EMERGE	DEVASTATES ESTABLISHED VENDORS; ENCOURAGES NEW FIRMS TO EMERGE
MEDIUM	NEGATIVE IMPACT; MAY NEED TO OFFER DEVELOPMENT TO CUSTOMERS AND OR PROSPECTS TO PROTECT BUSINESS	NEGATIVE IMPACT; MAY NEED TO OFFER DEVELOPMENT TO CUSTOMERS AND/ OR PROSPECTS TO PROTECT BUSINESS	MUST PREPARE TO MEET CHANGE BY BUYING SMALL VENDOR WITH EXPERTISE OR PARTICIPATION IN JOINT VENTURE
LARGE	ABSORB CHANGE	EMPHASIZE APPLICATION AND INDUSTRY KNOWLEDGE. WAIT TO SEE WHAT CUSTOMERS AND PROSPECTS WANT PREPARE TO ABSORB CHANGE OR BUY VENDOR	SEE OBSERVATIONS TO LEFT, PREPARE TO BUY VENDOR WITH EXPERTISE IN NEW OFFERING (OR PARTNER)

INPUT

FUTURE CHANGES IN SERVICE

- A FEW VENDORS WITH LARGE SCALE SI CAPABILITIES WILL TEND TO DOMINATE AN INDUSTRY OR SUB INDUSTRY SUCH AS INTERNATIONAL BANKING OR PROCESS MANUFACTURING.

    - THESE VENDORS WILL GARNER MOST OF THE LARGE USERS OF SI IN AN INDUSTRY.

    - THEY WILL SELL DOWNHILL TO MID SIZED AND SMALLER FIRMS WITH SOLUTIONS THAT CAN BE PORTED (VIA UNIX FOR EXAMPLE).

    - OTHER IS SERVICES, BUSINESS OR INDUSTRIAL KNOWLEDGE AND TECHNICAL CAPABILITIES WILL ALSO BE SOLD TOGETHER WITH SI OR AS ADD ON SERVICES.

INPUT

FUTURE CHANGES IN SERVICE - (CONT'D)

- THE DOMINANT VENDORS WILL BUY OR USE PRODUCTS/SERVICES OF OTHER IS FIRMS EVEN IF THEY HAVE TO ACQUIRE OR COVENTURE WITH THE FIRMS.

- VENDORS WHO OFFER MID-SIZED SI CAPABILITIES WILL FIND TARGET MARKETS WHERE THEY CAN MAINTAIN A PRESENCE AND DOWNSIZE SOLUTIONS FOR SMALL FIRMS. THEIR REVENUE LEVELS WILL BE LOWER THAN THE REVENUES OF VENDORS WHO CAN OFFER LARGE SCALE SI SOLUTIONS.

- VENDORS WHO SELL A LIMITED NUMBER OF MEDIUM OR ANY NUMBER OF SMALLER SI SOLUTIONS WILL NOT BE MAJOR WINNERS IN THE MARKETPLACE. THEY WILL OFFER OTHER IS PRODUCTS AND/OR HOPE THAT THEY WILL BE ACQUIRED BY LARGER VENDORS.

INPUT

MAJOR APPLICATIONS GROUPINGS

- CORE APPLICATIONS...ILLUSTRATIONS.

    - RETAIL, INTERNATIONAL OR CORPORATE BANKING.

    - INTEGRATED MERCHANDISING OR RETAIL STORE OPERATION.

    - FREIGHT OR WATER CARRIER DISTRIBUTION.

    - FOOD SERVICE.

    - HOSPITAL ACCOUNTING, "HOSPITAL" SYSTEMS.

    - MRP, INTEGRATED DISTRIBUTION, MANUFACTURING ACCOUNTING.

- SUPPORT APPLICATIONS...ILLUSTRATIONS.

    - HUMAN RESOURCES, PERSONNEL, PAYROLL.

INPUT

MAJOR APPLICATIONS GROUPINGS - (CONT'D)

- THIRD PARTY HEALTH ADMINISTRATION.

- PURCHASING.

- TECHNICALLY ORIENTED APPLICATIONS (WITHOUT INFORMATION SYSTEMS TECHNOLOGY, THESE APPLICATIONS COULD NOT EXIST)...ILLUSTRATIONS.

  - CREDIT CARD RELATED SYSTEMS, ATM, POS.

  - CAD/CAM.

  - BAR CODE BASED SYSTEMS.

- PROFESSIONAL (MOST OF THESE ARE TURNKEY).

  - DOCTOR, DENTIST, ACCOUNTANT, REAL ESTATE.

INPUT

WHERE IS THE MAJOR SI ACTIVITY

- CLOSE CORRELATION WITH AREAS OF HIGH IS DOLLAR VOLUME.

  - FINANCE.

  - MANUFACTURING.

- WHERE MAJOR TECHNICAL CHANGES REQUIRE SUPPORT.

  - CAD/CAM.

  - EFT.

  - ROBOTICS.

INPUT

SELECTED IS VENDORS WHO OFFER SYSTEMS INTEGRATION

TURNKEY VENDORS	ASK (MANMAN SYSTEM) AUTOTROL (A SEGMENT OF GS 2000 AND GS32) C3 (CUSTOMIZED TURNKEY) COMPUTER CONSOLES (DIRECTORY ASSISTANCE) INTERGRAPH (CUSTOMIZED CAD/CAM) YIPKON (FINANCIAL FORMS PURCHASING/INVENTORY) TERA (UTILITY, PERTROCHEMICAL, FOOD PROCESSING)
PROFESSIONAL SERVICES	CGA/TSS (CONSTRUCTION) CAP INFORMATION SYSTEMS (BANKING AND BROKERAGE) GEISCO (BANKING, MANUFACTURING) MCAUTO (INTERNATIONALBANKING, AIRLINE AND TRAVEL, MANUFACTURING) SYSTEMS AND COMPUTER TECHNOLOGY (EDUCATION AND LOCAL GOVERNMENT)
SOFTWARE PRODUCTS	HOGAN (BANKING - UMBRELLA) INSCI (HUMAN RESOURCES) UCCEL (BANKING)
HARDWARE AND OTHER VENDORS	IBM DG EDS SYSTEMATICS

SIZING SI BUSINESS

INFORMATION SERVICE MODE	1984 REVENUE	SYSTEM INTEGRATION PORTION	
	($ MILLION)	PERCENT	DOLLAR VOLUME ($ MILLION)
TURNKEY SYSTEMS	3779	30%	1134
PROFESSIONAL SERVICES	8605	15%	1291
APPLICATION SOFTWARE PRODUCTS	2741	10%	274
PROCESSING VENDORS	14200	5%	710
OTHER	------	-----	-----
		TOTAL	3409

GROWTH OF SI BUSINESS

IN $MILLION

15645

35% AAGR

3409

1984   1989
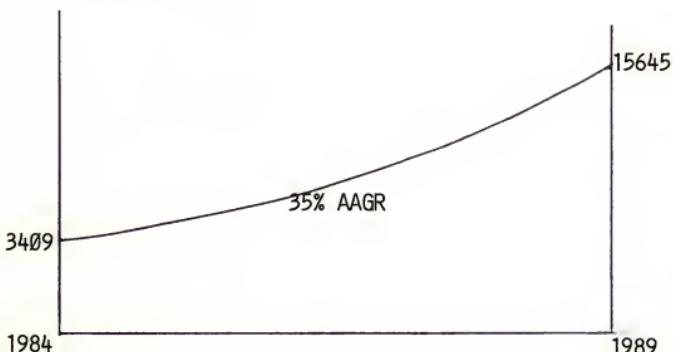
INPUT

FACTORS INFLUENCING GROWTH OF SI

TYPE OF VENDOR	COMPETITION IN PRIMARY AREA OF SERVICE	MEETING UNMET NEEDS OF USERS	MEANS OF OPENING DOORS	MORE PROFITABLE BUSINESS
HARDWARE	HIGH	LOW*	HIGH	MEDIUM
APPLICATION SOFTWARE	MEDIUM	HIGH	HIGH	LOW
PROFESSIONAL SERVICE	HIGH	MEDIUM	HIGH	HIGH
TURNKEY	MEDIUM	MEDIUM	HIGH	LOW
RCS	HIGH	MEDIUM	HIGH	HIGH

* EXCEPT FOR A FEW NOTABLE EXCEPTIONS

INPUT

USER NEEDS AND ATTITUDES THAT FAVOR AN SI APPROACH

NEEDS/ATTITUDES	IMPORTANCE TO USER
MEET BUSINESS OBJECTICES RAPIDLY	HIGH
DO WHAT HAS BEEN DONE ELSEWHERE	MEDIUM
ACT MORE RAPIDLY THAN INTERNAL IS CAN	MEDIUM
SAVE COSTS OVER AN INTERNAL IS SOLUTION	LOW
FRUSTRATION OVER IS BACKLOG	MEDIUM/HIGH
DESIRE TO TAKE RESPONSIBILITY FOR SYSTEM	MEDIUM
NEED TO INTEGRATE OPERATION OF SEVERAL FUNCTIONS	MEDIUM
REDUCE RISKS OF SYSTEM DEVELOPMENT	MEDIUM

INPUT

MOTIVATION FOR OFFERING SI

	FOR	
	PROFESSIONAL SERVICE VENDORS	TURNKEY VENDORS
TO OPEN DOOR	HIGH	HIGH
TO IMPROVE TOTAL REVENUE	MEDIUM	MEDIUM
TO IMPROVE MARGIN	HIGH	LOW
TO REPLACE APPLICATION SYSTEMS	MEDIUM	LOW
TO INSTALL NEW SYSTEMS	MEDIUM	HIGH
NET MOTIVATION	HIGHER	

INPUT

FUNCTIONAL CAPABILITIES REQUIRED

- INDUSTRY KNOWLEDGE (MANUFACTURING, BANKING, INSURANCE, DISTRIBUTION, ENGINEERING, ETC.)

- KNOWLEDGE OF CORE APPLICATIONS IN INDUSTRIES OF INTEREST.

- MANUAL SYSTEMS AND PROCEDURES.

- COMPUTING SYSTEMS APPLICATION ANALYSIS, DEVELOPMENT AND MAINTENANCE.

- COMMUNICATION NETWORK DESIGN AND IMPLEMENTATION.

- PROJECT MANAGEMENT.

INPUT

JOINT EFFORTS TO BUILD
SYSTEMS INTEGRATION CAPABILITIES

TYPE OF ARRANGEMENT	EXAMPLE	INVESTMENT REQUIRED
ACQUISITION	GEISCO...BSI ($MILLION)	HIGH
ENCOURAGEMENT	WANG...YIPKON DEC....COMTEX	LOW LOW
PARTNERS	FLEET BANK & HEALTH CARE APPLICATION GROUP	MEDIUM
JOINT VENTURE	MERRILL LYNCH AND IBM	HIGH

INPUT

ILLUSTRATION OF VENDOR
FLEXIBILITY

(RE: MRP SYSTEMS)

APPLICATION
SOFTWARE
ALONE

APPLICATION
SOFTWARE
& DBMS

APPLICATION
CONSULTING

HARDWARE
CONSULTING

PROJECT
MANAGER
ROLE

PROF.
SERVICE

SI APPROACH

ASK   GEISCO   COOPERS   CULLINET   XEROX
MANMAN   4GL   LYBRAND   MAS
           & BASE   CONSULTING
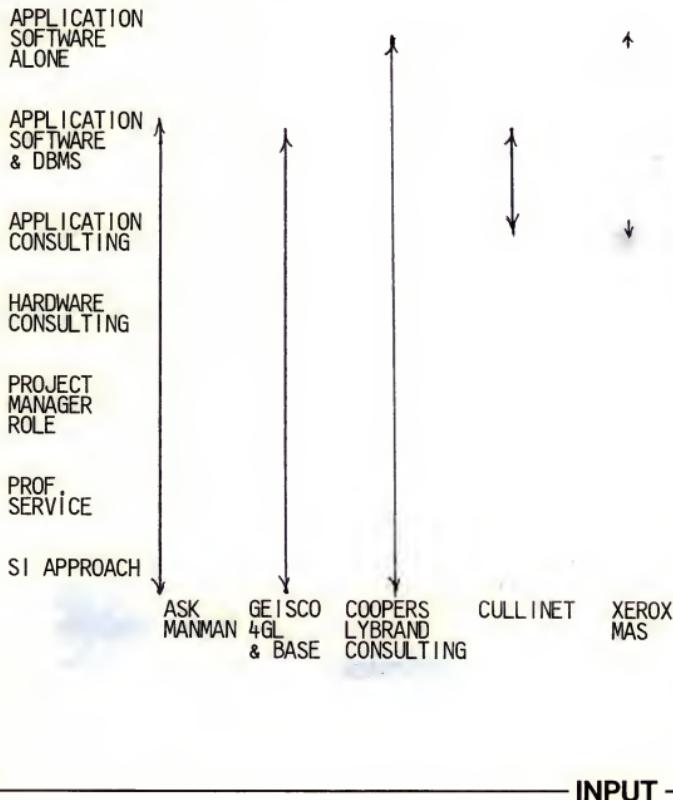
REASONS FOR CONTACT
WITH SI VENDOR (USER VS IS)

ACTIVITY	USER	IS
Contact vendor due to work at another company	High	Medium
Articles or ads in industry publications	High	Low
Talks at industry shows	High	Low
Booths at shows	Medium	Low
Backlogs in IS	High	Medium
Frustration with IS	High	---
Vendor initiated contact	High	Medium
User asked IS to make contact	---	Medium

INPUT

ROLE OF IS IN USE OF SI VENDOR

VARIOUS ROLES ARE SEEN:

- NON INVOLVEMENT.

- MONITORING CONTACT WITH WORK WITH USER GROUPS.

- PARTICIPATION IN THE STEPS OF USING A SYSTEMS INTEGRATOR.

- CONTROL OF THE PROCESS OF USING A SYSTEMS INTEGRATOR (OR ACTUALLY TRYING TO PLAY THE ROLE OF PRIME CONTRACTOR).

— **INPUT** —

STEPS OF USING A SYSTEMS INTEGRATOR

- IDENTIFYING WHEN SI CAN BE USED.

- FINDING OR IDENTIFYING SI VENDORS.

- VISITING CUSTOMERS OF A VENDOR.

- DEVELOPING SPECIFICATIONS FOR A SYSTEM AND/OR AN RFP.

- EVALUATING AND SELECTING A VENDOR.

- NEGOTIATING AND WRITING A CONTRACT.

- TESTING, ACCEPTING AND INSTALLING THE SYSTEM.

INPUT

**RELATIVE IMPORTANCE OF FACTORS
FOR EVALUATING SYSTEMS INTEGRATOR**

FACTOR	USER JUDGEMENT
REPUTATION	HIGH/MEDIUM
INSTALLATIONS IN INDUSTRY	HIGH
ABILITY TO DEMONSTRATE SIMILAR SYSTEM	HIGH
APPLICATION KNOWLEDGE	HIGH
IS KNOWLEDGE	MEDIUM
EXTENT TO WHICH SYSTEM WILL MEET USER NEEDS	VERY HIGH
TIME TO DELIVER SOLUTION	MEDIUM IF WITHIN CERTAIN PERIOD
PRICE	CERTAIN RANGE IS ACCEPTABLE
OPERATIONAL COST	LOW, PROVIDING THAT THE COST SEEMS REASONABLE

INPUT

PRICING ISSUES FOR VENDOR

- RECURRING REVENUES.

- FIXED OR VARIABLE PRICE FOR LOOSE SPECIFICATIONS.

- SEPARATE OR BUNDLED PRICING.

- ADD ONS.

INPUT

- MARGINS.

    - HARDWARE...30 TO 50%.
    - SYSTEMS AND PROGRAMMING...5 TO 10%.
    - CONSULTING...15 TO 25%.
    - SOFTWARE APPLICATION PACKAGES...40 TO 60%.

INPUT

CONTRIBUTION TO REVENUE
FROM SI COMPONENTS

HARDWARE	55%
SOFTWARE AND PROFESSIONAL SERVICES	36%
MISCELLANEOUS	9%

INPUT
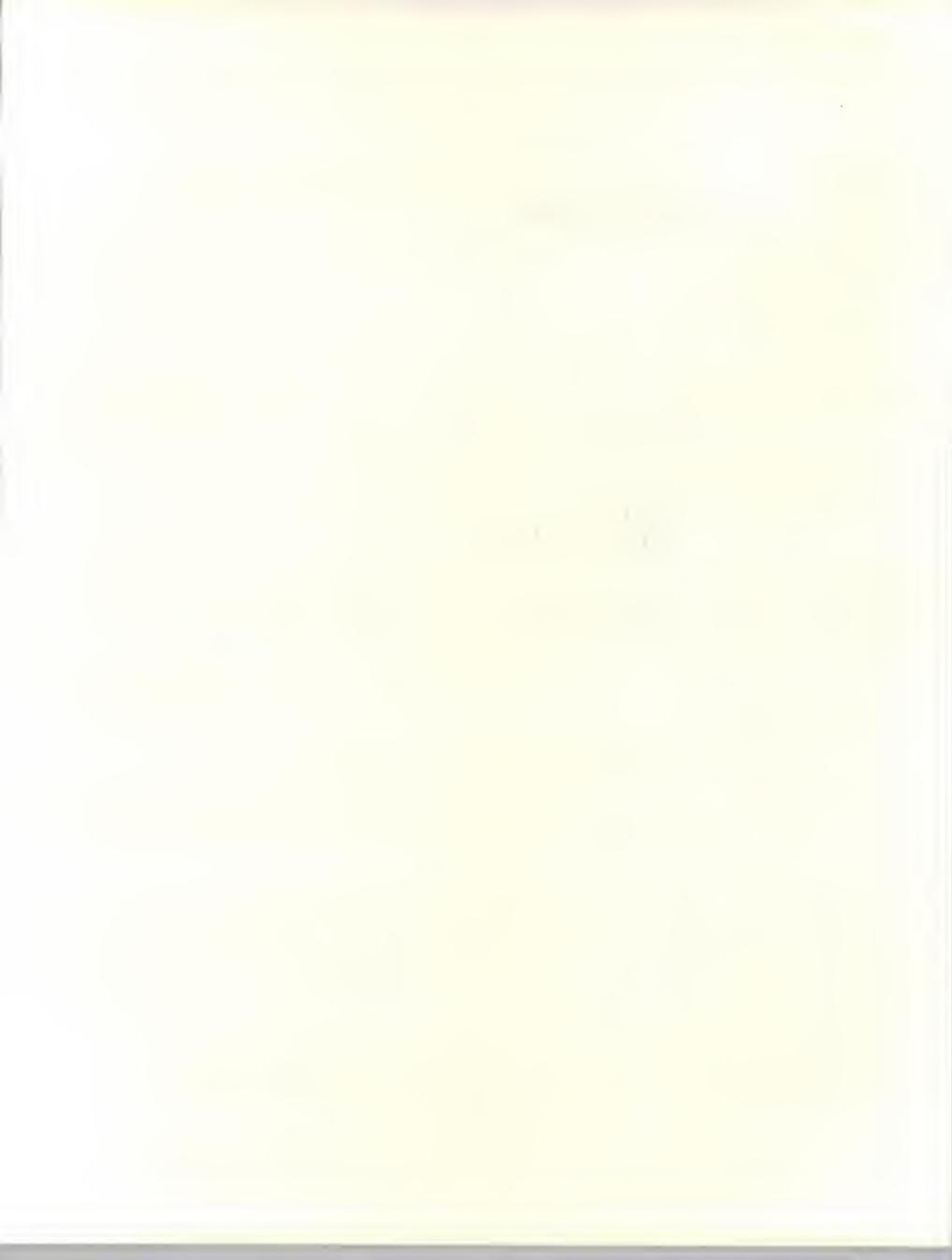
PERCEPTION

● SYSTEMS INTEGRATION ACTIVITIES ARE SUBSTANTIAL IN
  NUMBER AND IN REVENUE BUT MANY VENDORS ARE NOT
  WELL POSITIONED IN REGARD TO:

  - COMPETITION.

  - SIZE OF SOLUTION.

  - APPROACH TO SI.

  - LIFE CYCLE OF APPLICATION SYSTEM APPROACH.

  - RISKS IN SYSTEM COMPONENTS AND APPROACH.

INPUT

STRENGTHS AND WEAKNESSES
OF SYSTEMS INTEGRATION
(IN POTENTIAL INCOME)

LEVEL OF
CUSTOMIZATION
GIVEN TO CUSTOMER

STRENGTH

WEAKNESS

CUSTOMIZATION
100%

FLEXIBILITY
IN PRICING

STRENGTH

WEAKNESS

COMPLETELY
UNBUNDLED,
EVERYTHING
IS CHARGED
FOR

COMPLETELY
BUNDLED,
CAN NOT
ADD CHAR-
GES EASILY
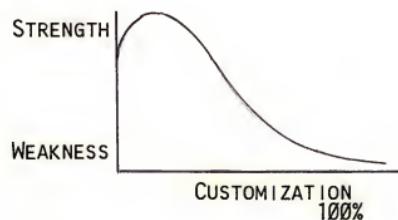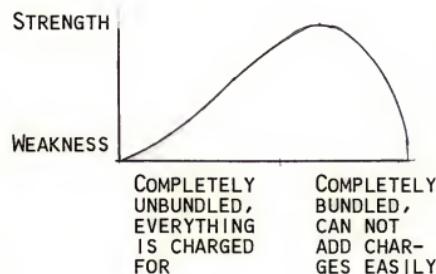
ABILITY TO
USE WHAT IS
AVAILABLE

STRENGTH

WEAKNESS

MUST HAVE
RIGHT TOOLS

USE ANY
TOOLS

INPUT

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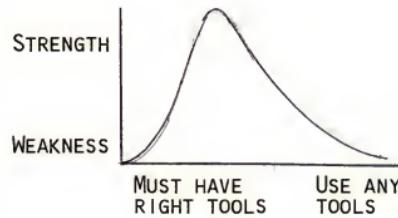
RISK ANALYSIS OF SI APPROACH
(AN EXAMPLE)

HIGH

REVENUE
POTENTIAL

DATABASE TYPE
OF LINKING
SOFTWARE

NON
DATABASE
TYPE OF
LINKING
SOFTWARE

LOW

LOW   RISK   HIGH

INPUT

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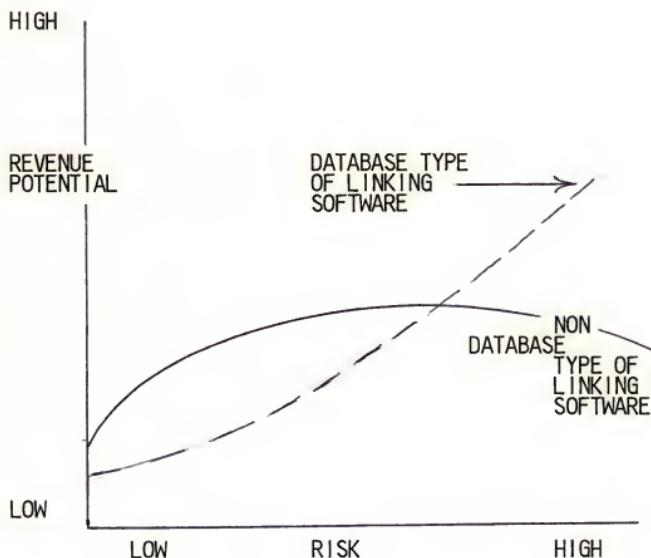
NEEDS DRIVING CUSTOMERS TO SYSTEMS INTEGRATION

CURRENT NEED	TYPES OF FIRMS ACTING ON THIS NEED	CHANGE IN FUTURE
CHANGE TO A NEW APPLICATION SYSTEM FROM ONE THAT IS OUTMODED, LIMITED AND HARD TO LEAVE	LARGE AND MEDIUM SIZE FORTUNE 500	CONTINUING NEED
FIRMS THAT CANNOT OR DO NOT WANT TO AFFORD RESEARCH AND DEVELOPMENT OF NEW OR STATE OF THE ART APPLICATION SYSTEMS	MANY MEDIUM AND SMALL SIZE BANKS, RETAIL AND WHOLESALE DISTRIBUTORS AND MANUFACTURERS	GROWING
FIRMS THAT CAN OBTAIN BENEFITS IN EARNINGS OR COST REDUCTIONS FROM RAPID INTRODUCTION OF IS TECHNOLOGY	MANY MEDIUM AND SMALL SIZE BANKS, BROKERAGE HOUSES, ENGINEERING, AND MANUFACTURING FIRMS	GROWING

INPUT

SITUATIONS WHICH OFFER REVENUE OPPORTUNITIES

- LARGE SCALE SI FOR FIRMS IN A SINGLE INDUSTRY.

- A SIGNIFICANT NUMBER OF CUSTOMERS WITH MEDIUM
  SCALE SOLUTIONS IN AN INDUSTRY OR FUNCTIONAL
  AREA.

- THE ADDITION OF MORE SERVICES OR PRODUCTS FOR SI
  CUSTOMERS.

- EDI AND COMPLEX SYSTEMS INTEGRATION WHICH WERE
  DISCUSSED PREVIOUSLY PROVIDE A SIGNIFICANT
  OPPORTUNITY TO VENDORS AS WELL.

INPUT

IMPACT ANALYSIS
FOR BEING A SYSTEMS INTEGRATOR

	NOW	IN 3 YEARS	IN FIVE YEARS
MEANS OF INFLUENCING OF IS SALES	DOOR OPENER	SIGNIFICANT MEANS	MAJOR MEANS
COMMITTMENT REQUIRED TO MAINTAIN POSITION	VENDORS WILL POINT TO THIS STRENGTH	VENDORS MAY LOSE FLEXIBILITY OF LEAVING, ENTERING MARKETS	VENDORS COULD FIND IT DIF- FICULT TO ABANDON POSI- TION IN SELECTED MARKETS
USING ACQUISI- TIONS, NEW TECHNO- LOGY TO EXPAND SI	CAN BE USED TO ESTABLISH NEW POSI- TION	CAN BE USED AS A COMPETI- TITIVE TACTIC	CAN BE USED COMPETITIVELY BUT MAY BE FORCED TO INVEST TO KEEP EARNINGS UP
DEPENDENCE OF USERS ON SI	HELPS TO HOLD USER BUSINESS, CAN CAUSE EXPENSES	MISTAKES IN APPROACHES OR TOOLS COULD LEAD TO MAJOR LOSSES	USER ORGANI- ZATIONS MAY DICTATE PLAN- NING TO VENDORS

INPUT

STREAMFN

FIRMS THAT MAY BE MAJOR FORCES IN SI

FIRM	REASON FOR POTENTIAL IN SI	POSSIBLE LIMITATIONS RE SI
CULLINET	INTEREST IN SI USE OF DBMS ABILITY TO INTEGRATE WORK OF MULTIPLE VENDORS	TOO MANY INTERESTS
ASK	POSITION IN SI	MAY BE LIMITED IN OUTLOOK
GEISO	MULTIPLE SI EFFORTS, MIXTURE OF SI AND OTHER RELATED WORK	MAY NOT FOLLOW UP ON BEST MARKET OPPORT.
MCAUTO	SEE ABOVE	SEE ABOVE
ADP	RECORD IN IS INDUSTRY, EXPERIENCE WITH IS	SHORT TERM NET INCOME GOALS MAY NOT BE MET BY SI.
ONE OR TWO BIG 8 FIRMS	IS VENTURES, INTERESTS AND CAPABILITIES	MAY NOT HAVE SUFFICIENT COMMITMENT
CITI	CURRENT PLANS AND POTENTIAL FOR IS	MAY BE MORE INTERESTED IN COMPLEX SI
ANOTHER MCB OR REGIONAL BANK	SI ACTIVITIES AND INTERESTS	FUNDING AVAILABLE FOR SI
ONE OR TWO MINI HARDWARE VENDORS	NEED TO USE IS TO SELL HARDWARE, SEE POTENTIAL OF SI	MAY NOT HAVE SUFFICIENT COMMITMENT OR BE WILLING TO DONWPLAY HARDWARE

INPUT

FIRMS THAT MAY BE MAJOR FORCES IN SI - (CONT'D)

| AT&T | CAPABILITIES | LACKING IN MARKET SENSITIVITY |
| IBM | CAPABILITIES | MAY BE MORE INTERESTED IN COMPLEX SI |

IDEAL CRITERIA FOR
EVALUATING VENDORS
OF INTEREST TO SPERRY

- LARGE SI SOLUTION EXPERIENCE.

- ABILITY TO GENERATE REVENUE.

- FINANCIAL STABILITY OF FIRM.

- GOOD POSITION IN INDUSTRY.

    - CAN PRECLUDE COMPETITION.

    - CAN ADD OTHER PRODUCTS/SERVICE TO EXISTING CUSTOMERS.

    - CAN SELL MEDIUM SCALE OR SMALL SCALE VERSIONS OF APPLICATION.

- KNOWLEDGE OF INDUSTRY AND FUNCTIONAL AREA.

- CHARACTERISTICS OF SOLUTION.

    - CAN ADD APPLICATIONS/SERVICES.

    - NETWORK BASED - CAN ADD/DISTRIBUTE ADDITIONAL APPLICATIONS TO RELATED FUNCTIONS.

    - USE OF DBMS AND INTEGRATED APPLICATIONS.

    - ABILITY TO DELIVER/PORT SMALLER VERSION OF SOLUTION (MEDIUM OR SMALL SCALE).

    - ABILITY TO PORT SOLUTION TO MULTIPLE TYPES AND SIZES OF COMPUTERS.

- RANGE OF SERVICES OFFERED BY VENDOR.

INPUT

RESOURCES OF SPERRY

- NAME IS KNOWN.

- FINANCIAL RESOURCES.

- WILLINGNESS TO USE COMPUTERS FROM SEVERAL
  VENDORS IN ONE SOLUTION.

- WILLINGNESS TO USE NEW SOFTWARE APPROACHES
  IN A SOLUTION (FGL, UNIX, ETC.)

- ABILITY TO ASSEMBLE/ACQUIRE FIRMS AND FORM
  RELATIONSHIPS TO USE IN SYSTEMS
  INTEGRATION.

INPUT